

CLAIMS

1. A power-supply apparatus comprising:

an input-voltage generation section for generating a direct current input voltage from an input alternative current;

a first power conversion section including a primary side for receiving said direct current input voltage as well as a secondary side isolated from said primary side and used for generating a direct current power-supply voltage to be supplied to a predetermined load as a result of a DC-DC power conversion process carried out on said direct current input voltage; and

a second power conversion section including a primary side for receiving said direct current input voltage as well as a secondary side isolated from said primary side and used for generating a power-supply voltage to be supplied to a backlight section of a display apparatus.

2. The power-supply apparatus according to claim 1, wherein said input-voltage generation section is a rectification/smoothing circuit, which:

comprises diodes for rectifying said alternative current and a capacitor for smoothing a rectified output of said diodes, and

generates said direct current input voltage as a voltage appearing between terminals of said capacitor.

3. The power-supply apparatus according to claim 1 wherein said input-voltage generation section is a power-factor improvement converter for generating a stabilized direct current output voltage as said direct current input voltage.

4. The power-supply apparatus according to claim 1, further including a detection section for detecting a voltage or current supplied to said backlight section and a feedback section for feeding back a detection signal generated by said detection section, wherein:

said second power conversion section has a switching device for switching said direct current input voltage and a driving section for driving said switching device; and

said feedback section isolates said detection signal and feeds back said isolated detection signal to said driving section in order to stabilize said power-supply voltage or current.

5. The power-supply apparatus according to claim 1, including said display apparatus comprising a plurality of said backlight sections, wherein as many said second power conversion sections as said backlight sections are

provided.

6. The power-supply apparatus according to claim 4, wherein:

a fluorescent tube is employed as said backlight section; and

said second power conversion section carries out power conversion process by performing a DC-AC power conversion process to generate an alternative current power-supply voltage to be supplied to said fluorescent tube.

7. The power-supply apparatus according to claim 4, wherein:

a light-emitting diode is employed as said backlight section; and

said second power conversion section carries out power conversion process by performing a DC-DC power conversion process to generate a direct current power-supply voltage to be supplied to said light-emitting diode.

8. A display apparatus having a backlight section and a load other than said backlight section, said display apparatus comprising:

an input-voltage generation section for generating a direct current input voltage from an alternative

current;

a first power conversion section including a primary side for receiving said direct current input voltage as well as a secondary side isolated from said primary side and used for generating a direct current power-supply voltage to be supplied to said load as a result of a DC-DC power conversion process carried out on said direct current input voltage;

a second power conversion section including a primary side for receiving said direct current input voltage as well as a secondary side isolated from said primary side and used for generating a power-supply voltage to be supplied to said backlight section; and

a display section for displaying a picture by using said backlight section.

9. The power-supply apparatus according to claim 8 wherein a plurality of said backlight sections is employed as a light source of said display section and as many said second power conversion sections as said backlight sections are provided.

10. The power-supply apparatus according to claim 8 wherein:

a fluorescent tube is employed as said backlight section; and

said second power conversion section carries out power conversion process by performing a DC-AC power conversion process to generate an alternative current as said power-supply voltage to be supplied to said fluorescent tube.

11. The power-supply apparatus according to claim 8 wherein:

a fluorescent tube is employed as said backlight section; and

said second power conversion section carries out power conversion process by performing a DC-DC power conversion process to generate a direct current as said power-supply voltage to be supplied to said light-emitting diode.